



**PORT of  
SAN DIEGO**  
Environment

# Port of San Diego

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Director, Environmental Conservation  
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# Port of San Diego

Jurisdiction

5 member cities

34 miles of waterfront

2,403 acres of land

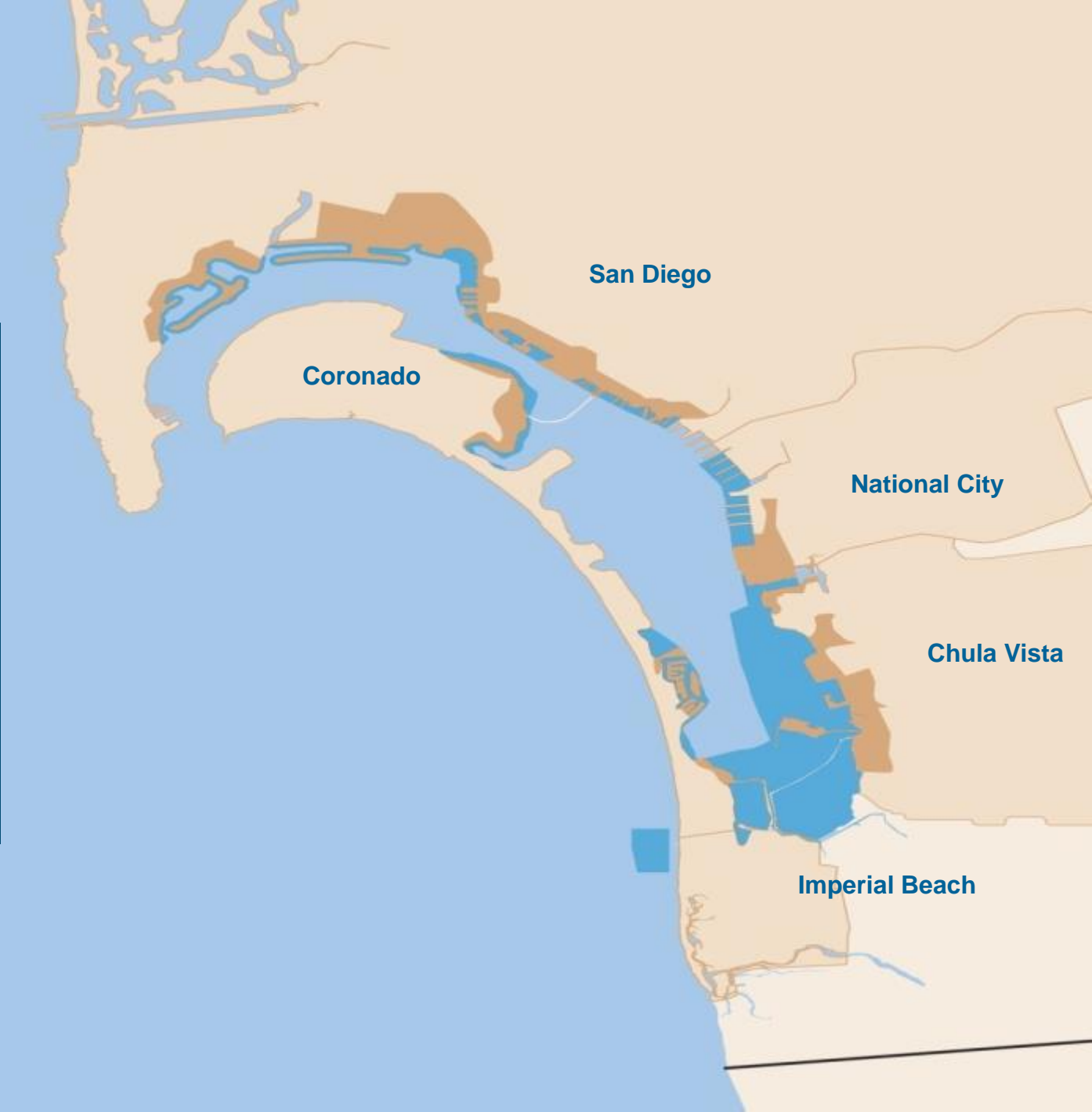
3,535 acres of water

22 public parks

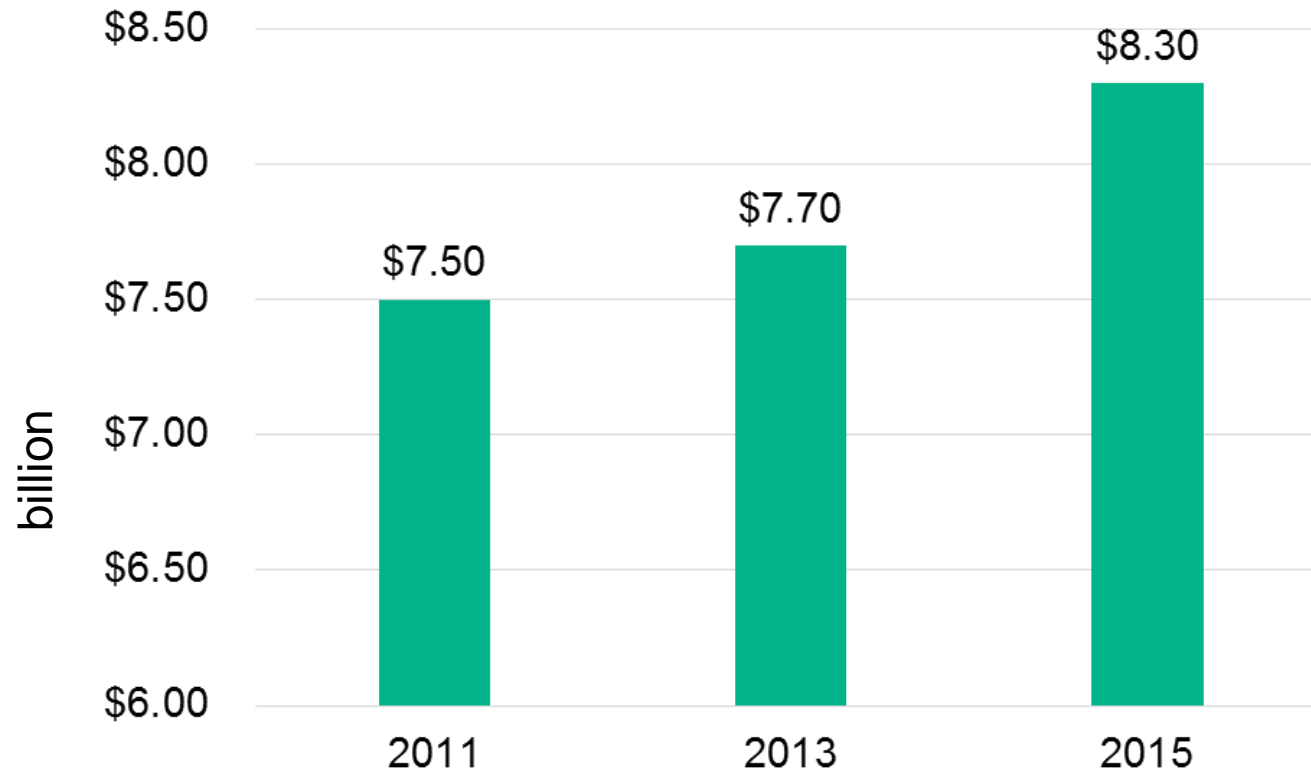
2 cargo terminals

2 cruise ship terminals

- Port Tidelands
- Submerged Tidelands



# Regional Economic Role



**\$8.3**  
**BILLION**

9% increase  
from 2013 to 2015



# Efficiency – Port Operations

*Since 2006*



Water Use  
Reductions

**56%**

Energy Use  
Reduction

**31%**

Costs  
Avoided

**\$8 million**

# Sea Level Rise Ad-Hoc Planning Process



Assist the Port to evaluate vulnerability from coastal flooding and inundation related to sea level rise.

# Sea Level Rise Ad-Hoc Committee

## Members

- Department of Navy
- Center for Sustainable Energy
- BAE Systems
- Port Tenants Association
- San Diego State University
- University of California, San Diego
- Shelter Island Marina
- US Fish and Wildlife
- Environmental Health Coalition
- Southwest Wetlands Interpretative Association

## Advisors

*Scripps Institution of Oceanography*  
Dr. Julie Kalansky

*United States Geological Survey*  
Dr. Juliette Finzi-Hart

*ICF International*  
Dr. Robert Kay

*Nexus Planning & Research*  
Dennis Larson

# Sea Level Rise Ad-hoc Committee

2017

- Background on SLR Science and Coastal Modeling
- Vulnerability Assessment
- Identify assets to be analyzed
- Progress on Vulnerability Assessment
- Recommendations from the Ad Hoc Committee

2018

- New ad-hoc committee to review
- vulnerability study
- adaptive management strategies
- monitoring program



# Memorandum of Agreement Coordinate on Sea Level Rise Planning

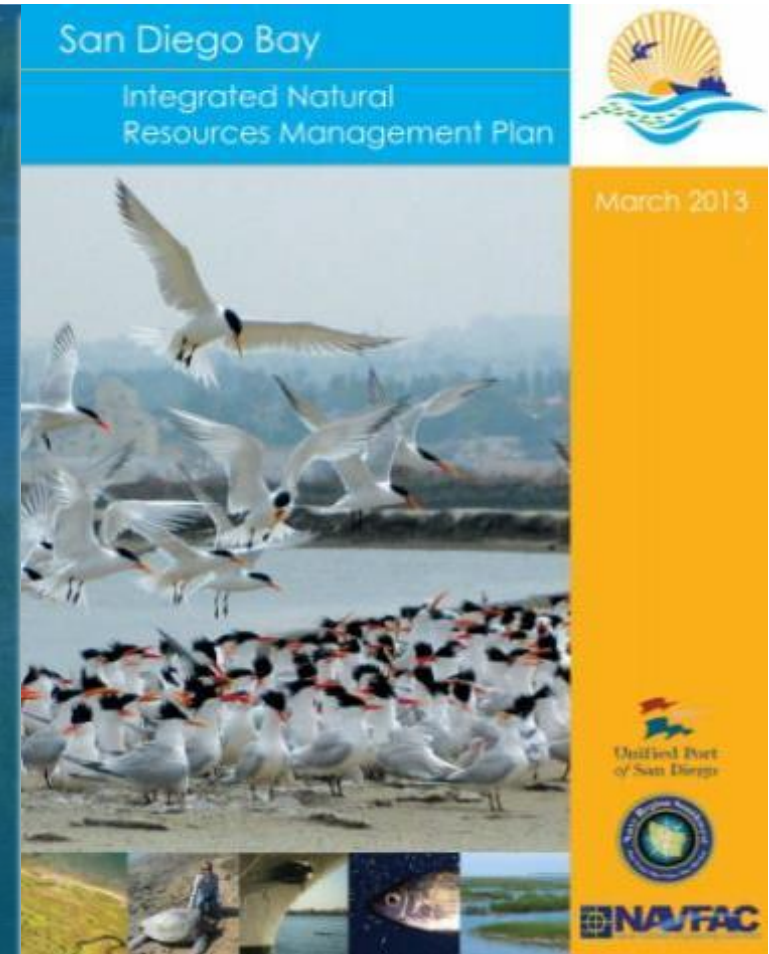
Port of San Diego  
&  
Commander, Navy Region Southwest





# Port & Navy Partnerships

The Integrated Natural Resource Management Plan sets forth a coordinated plan for natural resource management in San Diego Bay.



# Planning Initiatives

- Port is evaluating impacts of sea level rise pursuant to Assembly Bill 691.
- Planning for nature-based solutions to protect coastal resources.
- DOD has conducted over 700 assessments of flooding at coastal installations worldwide.
- Navy has forged partnerships with state and local governments to advance sea level rise planning.





# Memorandum of Agreement

- First MOA between Navy and Port on the West Coast.
- Appoints qualified staff to:
  - Coordinate sea level rise planning initiatives.
  - Share sea level rise policies, assessments, and guidance.
  - Re-evaluate science every five years.
  - Identify complimentary adaptation strategies.
  - Implement pilot projects as feasible.



# Restoration & Enhancement Projects South San Diego Bay



Restoration & Enhancement Projects  
for resiliency South San Diego Bay

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Restoration &  
Enhancement 280 acres

Pond 20

Living Shoreline



# Restoration & Enhancement 280 acres





**Chula Vista Wildlife Reserve**





Pond 11

Pond 10

Pond 10A

**Fish & Wildlife Refuge**



## Restoration & Enhancement Projects for resiliency South San Diego Bay

### Grant Funding provided by:

- US Environmental Protection Agency
- Port Environmental Fund
- California Coastal Conservancy
- US Fish & Wildlife Service
- NOAA – stimulus funds





## Restoration & Enhancement Projects for resiliency South San Diego Bay

### Volunteer Assistance provided by

- SD Audubon Society
- SD Oceans Foundation
- Ocean Discovery Institute
- Coronado Rotary Club



# Living Shoreline



# Living Shoreline

## Native Oyster Reefs

“Living shorelines utilize natural habitat elements to protect shorelines from erosion while providing critical habitat for fish, wetlands and aquatic plants, as well as wildlife”

Partners include:

- Port of San Diego
- California Coastal Conservancy
- US Fish & Wildlife Service Coastal Program
- Technical Advisory Committee



# Living Shoreline



- Climate change and sea level rise pose a threat to both developed coastal lands and remaining undeveloped coastal habitats
- Prevent large scale engineered armoring of shorelines
- Increase ecological value

# Living Shoreline

## Native Oyster Reefs

- Native oyster recruitment
- Unarmored shoreline
- Adjacent to marshland
- Moderate to high wave energy environment
- 2,300 linear feet of shoreline





# Living Shoreline



## Native Oyster Reefs

Resiliency for storm surge  
Erosion protection for shoreline  
Water Quality filtering by oysters

### Status

90% Design

Need construction funding - \$500,000

# Mitigation Bank at Pond 20



# Mitigation Banking



- 95 acres
- Former salt evaporation pond
- Coordinating mitigation bank with adjacent FWS restoration
- Create tidal wetlands



# Mitigation Banking

- Public comments on Prospectus
- August 2018
- EIR - Notice of Preparation
- in the Fall 2018
- Construction
- Fall 2020







## *Questions / Discussion*



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